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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/083,227	02/26/2002	Atsushi Abe	JP20010056US2	4748

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EXAMINER

BULLOCK JR, LEWIS ALEXANDER

ART UNIT	PAPER NUMBER
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2195

DATE MAILED: 03/10/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/083,227

Applicant(s)

ABE ET AL.

Examiner

Majid A. Banankhah

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 July 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-27 is/are rejected.
- 7) ☒ Claim(s) 5-9, 14-18 and 23-27 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____.

Response to Amendment

1. This final office action is in response to Applicant's amendment and response filed on July 5, 2005. Claims 1-27 are presented for examination

Applicant's amendments, and supporting arguments have been fully considered, but are not deemed to be persuasive. Claims 1-27 are rejected under 35 U.S.C. § 101 because the claim language does not expressly include computer hardware. Claims are rejected under 35 U.S.C. § 112 second paragraph as being incomplete for omitting essential elements. Claims 1-4, 10-13, and 19-22 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Shipman. Claims 5-9, 14-18, and 23-27 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Applicant on page 9 arguing that:

"Applicants disagree with the assertion that the term "job" as utilized in the claims could be interpreted as merely an abstract idea. The specification includes numerous characterizations and examples of "jobs" supporting the "plain meaning" claim interpretation rendering the reasonable interpretation of "job" to be any discrete task executed by "job execution means" (see page 6, line 11- page 7, line 16, describing job execution means for executing jobs".

Later on page 10 arguing that:

"Applicant disagree with the assertion on the bottom of page 3 that in order to comply with the requirement of 35 U.S.C. § 101, the claim language must expressly include computer hardware for performing the recited function in order to comply with the requirement of 35 U.S.C. § 101"

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In response, first it is submitted that while the claims are given their broadest interpretation, limitation appearing in the specification are not read into the claim. See *In re Morris*, 127 F.3d 1048, 1054-55, 44 USPQ2d 1023, 1027-28 (Fed. Cir. 1997). Limitations appearing in the specification but not recited in the claim are not read into the claim. *E-Pass Techs., Inc. v. 3Com Corp.*, 343 F.3d 1364, 1369, 67 USPQ2d 1947, 1950 (Fed. Cir. 2003) (claims must be interpreted “in view of the specification” without importing limitations from the specification into the claims unnecessarily). In *re Prater*, 415 F.2d 1393, 1404-05, 162 USPQ 541, 550-551 (CCPA 1969). See also *In re Zletz*, 893 F.2d 319, 321-22, 13 USPQ2d 1320, 1322 (Fed. Cir. 1989). Therefore, a claim containing “a system for controlling execution timing of jobs” where “controlling execution timing of job” can be read as either a computer is performing the job or another means or for example a person with the help of a pencil and paper is controlling the execution of job, means that the claim covers both systems. An applicant cannot write a claim where a term can be properly read as either a computer or another means to perform a job and then argue that he only means computer is performing the job. If it is just the computer why not to amend the claim to explicitly recite “a computer system”? Until he amend the claim language to remove the “a system” for controlling execution, the presence of the “a system” will result in a basis of statutory subject matter under 35 U.S.C. 101.

On page 12 applicant is arguing that:

“Shipman’s failure to disclose or suggest anything relating to scheduling in accordance with whether the task or job are regularly or irregularly executed in critical since it is the regular/irregular execution pattern that is fundamental to Applicant’s proposed invention. Since Shipman fails to disclose regularly and irregularly scheduled jobs, shipman cannot disclose “job execution means for executing a plurality of jobs, wherein

said plurality of jobs includes a first job executed at irregular time intervals and second job executed at regular time intervals.” Furthermore, without disclosing job executed at an irregular time intervals, Shipman cannot disclose probability forming means for determining a probability distribution in accordance with time at which execution of said first (i.e. irregular executed) job occurs. Likewise, shipman’s lack of disclosure relating to scheduling regularly executed jobs versus irregularly executed jobs compels a conclusion that shipman does not disclose or suggest execution timing means for scheduling execution of said second (i.e. regularly scheduled) job in accordance with said probability distribution. Shipman’s failure to discuss distinction between regularly and irregularly scheduled task as it relates to the system’s functionality is a critical gap between Applicant’s proposed invention is fundamentally based in such distinction and processing steps performed pursuant to such a distinction.”

This argument is not persuasive for the reason that applicant has not provided any reasoning as to why the scheduler of *Shipman* who can collect information of jobs according to historical performance of scheduling for any job types (regular and irregular) (see *Shipman*, col. 3, lns. 49-53, i.e., that is the generation of the demand forecast by using a normalized, weighted average of historical shipping data from a predetermined period to calculate the most likely demand per time interval in the future), cannot determine the statistical distribution function of one set of jobs and use that data to schedule other set of jobs (regular or irregular). The argument that, since *Shipman* fails to disclose regularly and irregularly scheduled jobs, shipman cannot disclose “job execution means for executing a plurality of jobs, wherein said plurality of jobs includes a first job executed at irregular time intervals and second job executed at regular time intervals” is considered as improper and mere assertions. Applicant must provide evidence as to why the job scheduler of *Shipman* cannot schedule a set of jobs (regular jobs) according to data collected from other set of jobs which are executed at irregular time intervals. Just because shipman does not mention “regular and irregular” does not mean the schedule of *Shipman* is

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incapable of scheduling regular jobs based on historical data collected from irregular jobs. When a system is capable of scheduling based on gathering “statistical” or “probability distribution” function of some jobs and use that distribution function to schedule another set of jobs, it certainly does not care whether the jobs are regular or irregular because he can collect statistical data from irregular jobs and use that statistical data to schedule regular jobs and the other way. Hence, this does not create a critical gap between Applicant’s proposed invention and the system of shipman.

In page 13, applicant argues that:

“page 6 of the Office Action asserts that shipman’s teaching of calculating probability distribution functions of jobs which may occur at any time (regular or irregular) would render Applicant’s proposed invention obvious to one skill in the art. Applicant urges that it is the very non-distinction between scheduling of regularly versus irregularly executed jobs that most clearly illustrate the vast difference between shipman’s method and the invention, which would not be bridged by an obvious or even non-obvious modification of shipman.”

This argument is repetitive and similar to the argument presented on previously therefore, applicant’s attention is directed to the above reasoning. In addition, it is pointed out that in the art of task management and scheduling it is the scheduling of a-periodic (irregular) task which is done by the majority of systems and periodic tasks normally are scheduled based on the first one, unless scheduling of periodic task has some significant which is not the issue in here. Therefore, a “scheduler” that can schedule a-periodic task based on statistical data collected, most certainly can schedule periodic task based on same statistical data, whether heuristic or based on statistical data.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

2. As to independent claims 1, 10 and 19, the language of claims raises a question as to whether the claim is directed merely to an abstract idea that is not tied to a technological art, environment or machine which would result in a practical application producing a useful, concrete, and tangible result to form the basis of statutory subject matter under 35 U.S.C. 101.

The “job” in these claims and their associated dependent claims does not have to be computer jobs and could just an abstract idea. Gathering “probability distribution function”, or using any standard distribution function is also mathematical idea. Manipulation of abstract idea (whether it is system claim [1], or method claim [10] and/or product claim [19]) results in abstract idea and does not result in useful, concrete, and tangible result.

Additionally, independent claims 1, 10 and 19 and associated dependent claims 2-9, 11-18 and 20-27 do not appear to require any computer hardware to implement the claimed invention. These claims appear to define the metes and bounds of an invention comprised of software alone. Software alone, without a machine, is incapable of transforming any physical subject matter by chemical, electrical, or mechanical acts.

If the "acts" of a claimed process manipulate only numbers, abstract concepts or ideas, or signals representing any of the foregoing, the acts are not being applied to appropriate subject matter. In re Schrader, 22 F.3d 290 at 294-95, 30 USPQ2d 1455 at 1458-59 (Fed. Cir. 1994).

Transformation of data by a machine constitutes statutory subject matter if the claimed invention as a whole accomplishes a practical application. That is, it must produce a "useful,

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concrete and tangible result." State Street, 149 F.3d 1368, 1373, 47 USPQ2d 1596 at 1600-02 (Fed. Cir. 1998). MPEP 2106.

State Street required transformation of data by a machine before it applied the "useful, concrete, and tangible test." However (State Street does not hold that a "useful, concrete and tangible result" alone, without a machine, is sufficient for statutory subject matter. State Street, 149 F.3d at 1373, 47 USPQ2d at 1601.

It must be pointed out that in claim 10, amending claims to read, as "computer implemented method of" does not overcome the deficiency of the claim because, the job could be anything including mathematical modeling.

Accordingly, claims 1-27 are rejected under 35 U.S.C. 101 because the claimed invention, appearing to be comprised of abstract idea. The claims are also appearing to be software alone without claiming associated computer hardware required for execution, is not supported by either a specific and substantial asserted utility (i.e., transformation of data) or a well established utility (i.e., a practical application).

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 1-27 are rejected under 35 U.S.C. § 112, second paragraph, as being incomplete for omitting essential elements, such omission amounting to a gap between the elements. See MPEP § 2172.01. The omitted elements are computer hardware necessary to execute the claimed software and render the invention operative.

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Additionally, the term "about the time" in claims 4, 13, and 22 is a relative term, which renders the claim indefinite. The term "about the time" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably appraised of the scope of the invention.

Claims 7, 16, and 25 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claims 7, 16, and 25, "reference value", and "non occurrence duration" are so vague that makes the claim confusing and does not permit understanding of the limitation. "reference value" is a point in time, while "duration" is a time period (regardless of a reference). How it is possible to compare a "reference value" (a single point in time) with "duration" (an absolute value). Additionally, "execution processing" is vague. It is unclear what applicant means by this term. Moreover, in line 4, it is unclear what "execution means from executing the second job" is meant to be. Does that means, from start of the execution of the second job, end of execution of the second job and/or anytime in between.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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5. Claims 1-2, 10-11, and 19-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shipman (US Pat. No. 5,819,232, hereafter Shipman).

As to claims 1, 10, and 19, the reference of Shipman taught the invention as claimed including, a system for controlling execution timing of jobs, comprising (the system of Shipman):

job execution means for executing a plurality of jobs, wherein said plurality of jobs includes a first job executed at irregular time intervals and a second job executed at regular time intervals (col. 3, line 49-68);

probability distribution forming means for determining a probability distribution for times at which execution of said first job occurs (col. 4, lines 45-55);

and execution timing means for scheduling execution of said second job in accordance with said probability distribution (col. 4, line 56 to col. 5, lns. 2).

The system of Shipman does not explain regular time interval and irregular time intervals.

However, Shipman teaches of the calculating probability distribution function of jobs occurring at any time (regular and irregular) from historical data to schedule the jobs in the future based on the distribution function. Therefore, it would have been obvious for a person ordinary skill in the art at the time the invention was made to use historical “probability distribution function” calculation method of Shipman for any job scheduling situation including historical distribution function calculation of job executing at irregular time intervals and using that in scheduling of jobs executing at regular time intervals, for the reason to save time and avoid execution of jobs that execute at regular time intervals at times when it is not necessary (Shipman, col. 2, lns. 15-31.

As to claims 2, 4, 11, 13, 20 and 22 Shipman taught the invention as claimed including, starting point of the probability distribution is set at the time at which said first job has completed execution (col. 3, lines 49-68). This step is obvious because unless the probability distribution is calculated for jobs that have finished execution otherwise Shipman could not schedule the distribution function based on historical date of executed jobs.

As to claims 3, 12, and 21, measuring statistical data over certain period of time is well known in the art as by definition historical data gathering in a statistical distribution must happen in certain and predetermined amount of time, for the reason to be able to study data over certain amount of time and be able to compare data gathered within one period with data gathered within another period of time. Additionally, Shipman's data gathering is not limited to certain time and it is open to any period of time including week-day zone and seasonal zone.

6. Dependent claims 5-9, 14-18, and 23-27 appear to be allowable over the prior art of record if rewritten to include all of the limitations of the base claim and any intervening claims, subject to withdrawal of the rejections under 35 U.S.C. j5101 and 112 set forth above for claims 1-27, and subject to the results of a final search.

Prior Art not relied upon

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

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8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 C.F.R. § 1.136(a).
A SHORTENED STATUTORY PERIOD FOR RESPONSE TO THIS FINAL ACTION IS SET TO EXPIRE THREE MONTHS FROM THE DATE OF THIS ACTION. IN THE EVENT A FIRST RESPONSE IS FILED WITHIN TWO MONTHS OF THE MAILING DATE OF THIS FINAL ACTION AND THE ADVISORY ACTION IS NOT MAILED UNTIL AFTER THE END OF THE THREE-MONTH SHORTENED STATUTORY PERIOD, THEN THE SHORTENED STATUTORY PERIOD WILL EXPIRE ON THE DATE THE ADVISORY ACTION IS MAILED, AND ANY EXTENSION FEE PURSUANT TO 37 C.F.R. § 1.136(a) WILL BE CALCULATED FROM THE MAILING DATE OF THE The application has been amended as follows: ADVISORY ACTION. IN NO EVENT WILL THE STATUTORY PERIOD FOR RESPONSE EXPIRE LATER THAN SIX MONTHS FROM THE DATE OF THIS FINAL.

How to Contact the Examiner:

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Majid Banankhah, whose telephone number is 571-272-3770. A voice mail service is also available at this number. The Examiner can normally be reached on Monday, and Wednesday - Friday, 7:00 AM - 3:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, An Meng-Ai who can be reached on 571-272-3756. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

All responses sent by U.S. Mail should be mailed to:

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PTO CENTRAL FAX NUMBER:
703-872-9306

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- Any inquiry of a general nature or relating to the status of this application should be directed to the TC 2100 Group receptionist:
(703) 305-3900.

3/2/06

MAJID BANANKHAH
PRIMARY EXAMINER
